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Summary of Price Movements, Compliance Patterns, and Enforcement Issues for the Final Rule to Reduce the Risk of an Outbreak of Transmissible Spongiform Encephalopathies (TSEs) in the United States

Final Report - Update
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1.0 INTRODUCTION

This report updates to September 1998 the market impacts of the U.S. Food and Drug Administration (FDA) regulation to prevent an outbreak of Transmissible Spongiform Encephalopathies (TSEs). FDA implemented the regulation on August 4, 1997. This report describes the price and market change and compliance patterns among the principal affected industries including renderers, feedmills, transporters of agricultural commodities, and ruminant cattle producers.

ERG gathered the data for this report from a number of interviews with personnel in the rendering, feed, and animal producing industries. Because most of the persons contacted were expressing their personal opinions and/or discussing potentially confidential matters, ERG has not quoted the individuals contributing to this report.

2.0 RECENT PRICE MOVEMENTS

Table 1 presents monthly prices for mixed species meat and bonemeal (MBM) and 48 percent soybean meal from June 1997 through September 1998. The data from this table are also presented in two figures:

Figure 1—the timeline for mixed species MBM and average 48 percent soybean meal prices

Figure 2—the price differential between mixed species MBM and 48 percent soybean meal

2.1 MBM Prices

- As of September 28, 1998, mixed species MBM was at essentially the same price (a $1 per ton price premium) as 48 percent soybean meal. Before the TSE issue arose, mixed species had historically sold at a premium to soybean meal of $5 to $45 per ton. Table 1 shows, however, that mixed species MBM sold at a discount to 48 percent soybean meal throughout early 1997 (prior to regulatory implementation) and into 1998 (the first 6 months after implementation). MBM's recent slight price improvement relative to 48 percent soybean meal might be due to exceptional soybean harvests.

  One rendering executive judged, based on the current price of substitute feed supplements, that MBM in the current market would likely be selling for $45 per ton above soybean meal were it not for the regulatory impact. Thus, he estimated that the regulation has reduced MBM prices by $45 per ton in the current conditions.

Table 1

Monthly Mixed Species MBM and Soybean Meal Prices per Ton
June 1997 through September 1998

	Mixed Species MBM 50 % Protein, Illinois	Soybean Meal 48% protein, Central Illinois, rail			Difference Between Mixed Species MBM and Soybean Meal Prices (a)
		Low	High	Average	
June 9, 1997	$280.00	$277.00	$285.00	$281.00	($1.00)
July 14, 1997	$280.00	$279.50	$287.50	$283.50	($3.50)
August 11, 1997	$267.50 (b)	$264.00	$272.00	$268.00	($0.50)
September 8, 1997	$275.00	$300.00	$309.00	$304.50	($29.50)
October 13, 1997	$280.00	$240.50	$250.50	$245.50	$34.50
November 10, 1997	$227.50 (b)	$242.00	$249.00	$245.50	($18.00)
December 8, 1997	$230.00	$237.50	$247.50	$242.50	($12.50)
January 12, 1998	$210.00	$197.50	$204.50	$201.00	$9.00
February 9, 1998	$160.00	$202.00	$204.00	$203.00	($43.00)
May 11, 1998	$165.00	$154.00	$160.00	$157.00	$8.00
June 9, 1998	$157.50 (b)	$161.00	$162.00	$161.50	($4.00)
July 14, 1998	$175.00	$175.00	$183.00	$179.00	($4.00)
August 11, 1998	$172.50 (b)	$144.50	$150.50	$147.50	$25.00
September 3, 1998	$147.50 (b)	$139.50	$145.50	$142.50	$5.00
September 28, 1998	$130.00	$124.00	$134.00	$129.00	$1.00

(a) The difference between the mixed species MBM price and the average soybean meal price.
(b) The Wall Street Journal reported a range of mixed species MBM prices for these days.
For the purposes of this table the midpoint is presented.

Source: Wall Street Journal, Daily Cash Prices, 1997 and 1998.

Figure 1

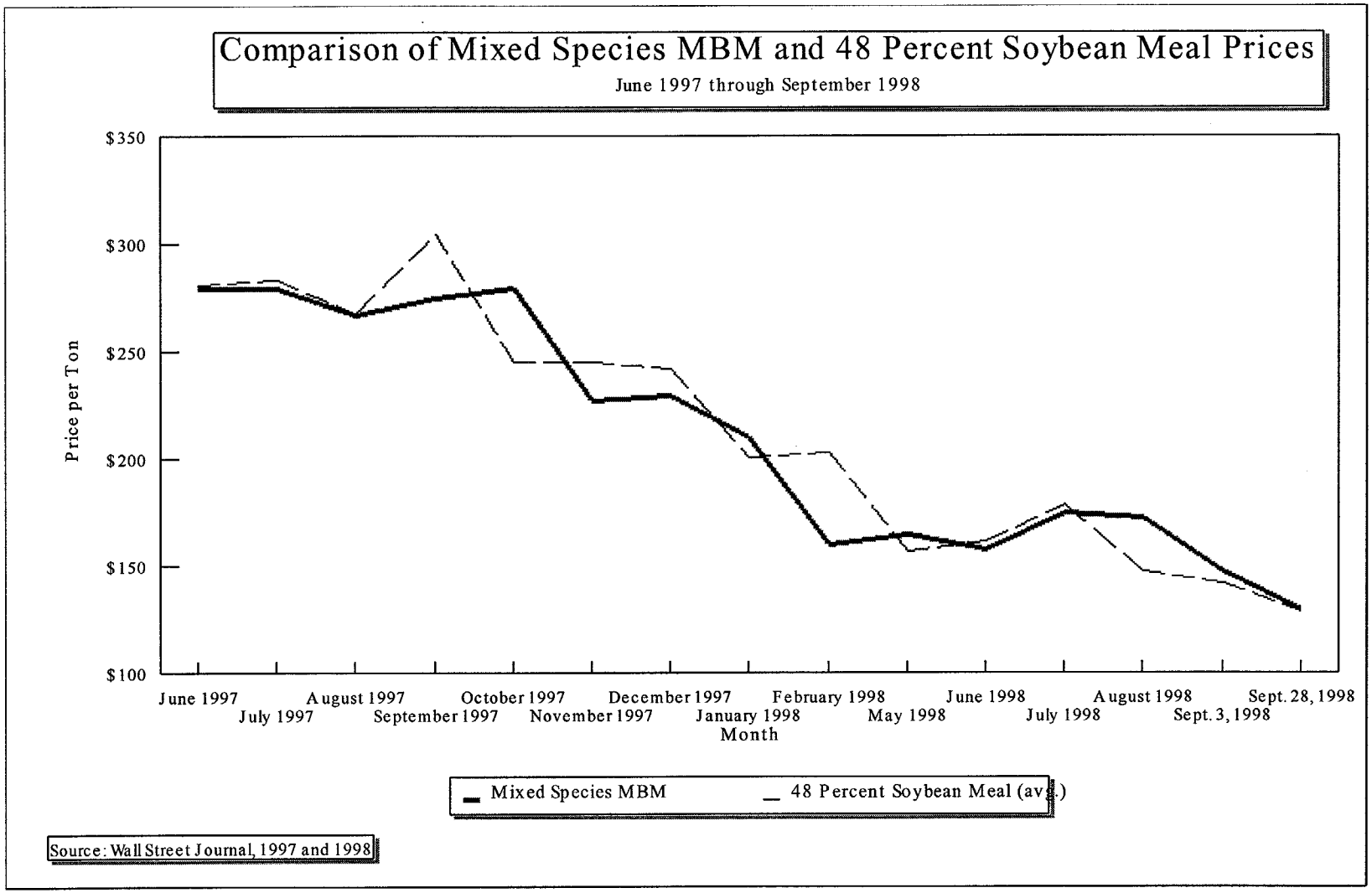
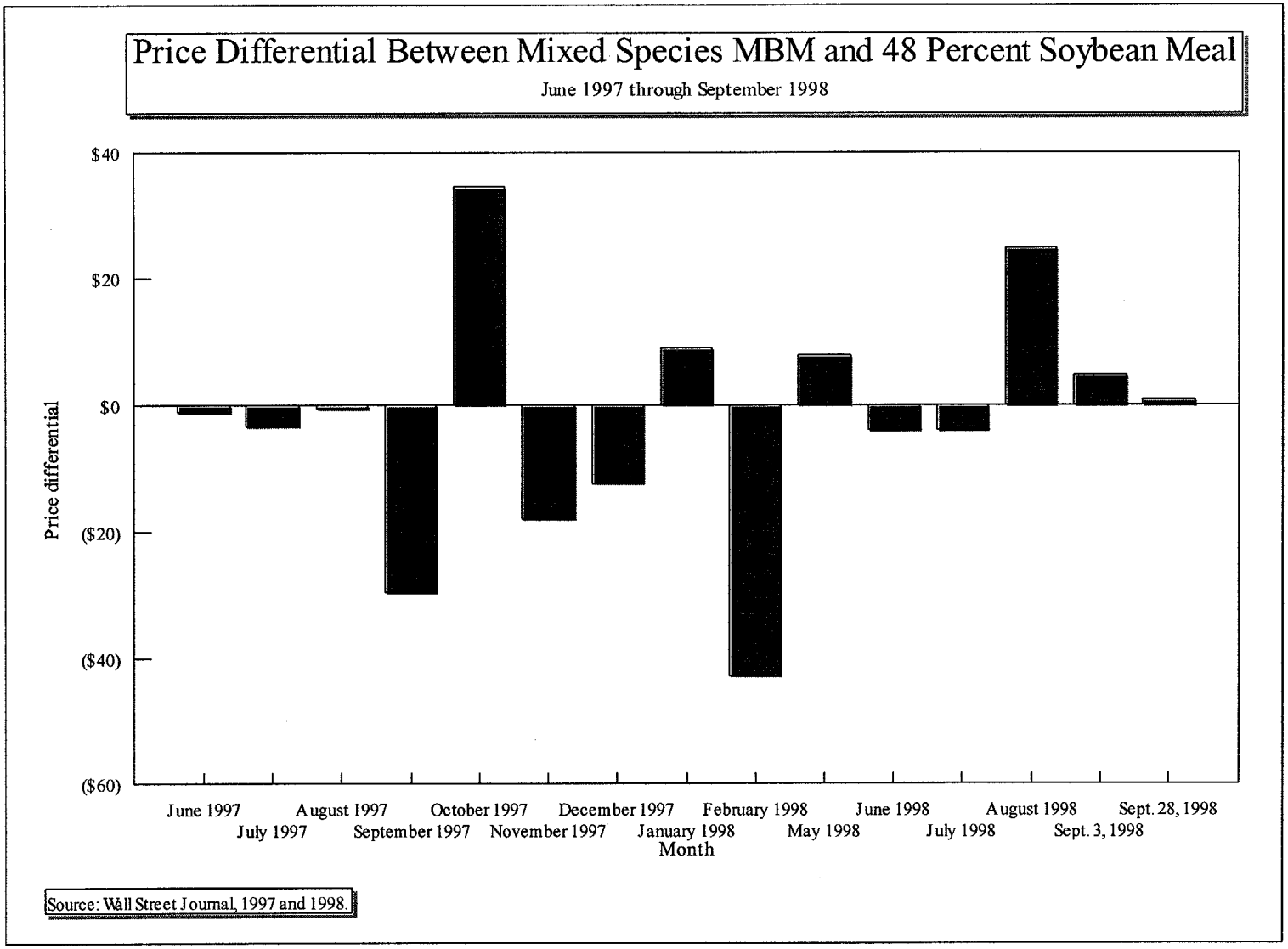

Comparison of Mixed Species MBM and 48 Percent Soybean Meal Prices
June 1997 through September 1998
$350
$300
$250
$200
$150
$100
Price per Ton
June 1997
July 1997
August 1997
September 1997
October 1997
November 1997
December 1997
January 1998
February 1998
May 1998
June 1998
July 1998
August 1998
Sept. 3, 1998
Sept. 28, 1998
Month
Mixed Species MBM
48 Percent Soybean Meal (avg.)
Source: Wall Street Journal, 1997 and 1998

Figure 2


Price Differential Between Mixed Species MBM and 48 Percent Soybean Meal
June 1997 through September 1998
$40
$20
$0
($20)
($40)
($60)
Price differential
June 1997
July 1997
August 1997
September 1997
October 1997
November 1997
December 1997
January 1998
February 1998
May 1998
June 1998
July 1998
August 1998
Sept. 3, 1998
Sept. 28, 1998
Month
Source: Wall Street Journal, 1997 and 1998.

- The prices for mixed species MBM and 48 percent soybean meal have each fallen approximately $140 per ton since the FDA rule went into effect in August 1997. This large drop is part of a broad decline in the price of many agricultural commodities.

  Mixed species MBM price movements typically lag after those of 48 percent soybean meal, as shown in Table 1. For example, the price for 48 percent soybean meal fell sharply (approximately $40 per ton) between early December 1997 and early January 1998. Mixed species MBM prices fell an equivalent amount between early January 1998 and early February 1998. A similar sequence of price declines occurred starting in July 1998.

  For the MBM market specifically, the decline in the Asian market has also played a role in lowering MBM prices relative to other prices. Exports markets for MBM have been depressed since the beginning of the Asian financial crisis in 1997. Renderers had pursued these markets partly to replace the domestic customers lost because of the TSE regulation.

- Historically, pure porcine MBM (which is not restricted by the regulation) has sold at a premium to mixed species MBM due to its higher palatability in pet foods. This premium increased when the regulation was first implemented but has recently declined, at least temporarily. One large Midwest supplier is currently selling pure porcine MBM for only a slightly higher price per ton than mixed species MBM. In view of the higher protein content of porcine MBM, there is essentially no price premium per unit of protein. This current price relationship reflects partly recent high slaughter rates for hogs.

- Some feedmill operators have switched away from ruminant and mixed species MBM entirely, even though they are serving pork producers or other unregulated markets. These feedmill operators are avoiding mixed species or pure ruminant MBM because of concerns about the public perception of risk or to avoid the FDA compliance requirements associated with this rule.

  The decline in demand for mixed species and ruminant MBM beyond that mandated by the regulation suggests that the price decline for these products could have been much steeper. The essential substitutability of mixed species MBM and other proteins, however, limits the decline in price. For example, according to one major seller, mixed species and ruminant MBM at current market prices are now substantially more attractive for poultry rations than when these products held a significant price premium to 48 percent soybean meal. Poultry producers, therefore, are probably now consuming a larger share of overall MBM production than they did before the regulation was implemented.

2.2 Tallow and Hide Prices

- As of September 3, 1998, bleachable tallow is selling for approximately $0.17 per pound, which is $0.05 per pound lower than one year ago (Wall Street Journal, 1998). The European Union (EU) has been considering restrictions on tallow sales due to TSE concerns for some time, which might weaken tallow sales eventually. (Tallow is co-produced with MBM and is important to renderer profits. Domestically, the FDA's TSE regulation has probably had little direct influence on this market.)

- Hide prices have generally remained depressed since the beginning of the Asian economic decline in 1997. Exports previously accounted for 60 percent of U.S. hide industry sales.

2.3 Pickup Charges

- When the regulation was first implemented, some renderers increased charges for dead stock and supermarket pickups to offset lower tallow, hide, and MBM prices. The further decline in these prices during 1998 has increased the renderers need to increase pickup charges. Renderers have commented to ERG several times, however, that increasing pickup charges significantly reduces the amount of dead stock offered. Some farmers are willing to bury animals on their own land rather than pay increased pickup charges.

3.0 COMPLIANCE PATTERNS

3.1 Renderers

- The regulation requires renderers to label mixed species and pure ruminant MBM so that they are not fed to ruminant animals. Based on comments by industry observers and personnel contacted for this study, renderers are not knowingly selling these products for ruminant feed and are apparently in compliance with the TSE regulation.

- In the previous reviews of the regulatory impacts, ERG noted that renderers were often educating their customers about the TSE regulation. Among the contacts made for this study, one observer questioned whether renderers are always as proactive about educating potential customers as they might be. Given the high level of feedmill awareness and the labeling requirements, however, a very high percentage of customers, including virtually all feedmills, are probably aware of the regulatory restrictions. If material is sold to brokers, however, renderers might

not be extending themselves to monitor subsequent transactions for which they are not responsible.

- If any ruminant protein is being used for ruminant feeds, one observer suggested that such protein might be sold through commodity brokers. Brokerage sales are somewhat more difficult to track and a ruminant producer could occasionally purchase ruminant protein from several different brokers without becoming known to renderers or feedmill operators. Furthermore, brokers might be relatively unconcerned about FDA inspections. Nevertheless, ERG has no evidence that such sales are occurring.

- The FDA regulation requires renderers selling both restricted and unrestricted protein products to ensure that the two types of protein are separated throughout processing. Independent renderers, however, generally find it uneconomical to separate raw materials within their plants and, therefore, are not producing both restricted and unrestricted MBM at their plants. Thus the separation requirement of the regulation has had little effect on the rendering industry. ERG is not aware of any recent investments by renderers in new plant or equipment to allow separation of restricted and unrestricted protein products during 1998.

- The rendering industry is currently plagued with low profit margins and low returns on investment, which discourage investment in new plant and equipment, including investments to allow separation of proteins. The number of independent renderers in the industry continues to decline slowly.

3.2 Feed Manufacturers

- Awareness of the TSE regulation appears quite high. Some in the feed industry have been concerned that smaller feedmills (and some animal producers) still know very little about the regulation. Nevertheless, ERG did not identify any evidence that feedmill operators or their customers are behaving in a manner suggesting ignorance of the regulatory prohibitions.

  Most persons contacted felt that ample information had been made available to feedmills to facilitate their compliance. They commented that it remains the feedmill owner's responsibility to use the information provided.

- Based on our contacts, ERG did not identify any apparent non-compliance among feedmills with the core element of the TSE regulation, i.e., the prohibition on feeding of restricted protein to ruminant animals. In the view of many of our contacts, FDA's enforcement presence is substantial. For example, several people

judged it highly unlikely that a feedmill would risk FDA penalties (which they expected could include forced closure) by circumventing the regulation.

- Most of our contacts do not know how thoroughly feedmills and renderers are complying with the paperwork and documentation elements of the regulation. There might also be lower compliance with some aspects of the rule, such as the requirements to ensure safe separation of restricted and non-restricted proteins. Some feedmill operators have commented previously to ERG that they had originally underestimated the complications posed by spillage and occasional use of pet food "set asides" (off-specification material) in feeds. Additionally, one industry observer questioned how careful feedmills might be in preventing inadvertent contamination of raw materials (with ruminant protein) by transporters. (The transportation issue is addressed below). Some observers, however, judged that the feedmills they visited were attempting to operate "by the book."

- ERG again found that numerous feedmills are achieving compliance by avoiding any use of restricted protein in their facility, thereby simplifying their compliance requirements. We have found a number of feedmills that have eliminated restricted proteins even though they did not have any ruminant customers. For example, some feedmills in the Midwest serving only hog producers eliminated all restricted proteins from their mixes.

- There appears to be little resistance to compliance or controversies about the regulatory requirements among feedmill operators or their customers. For example, state feed and grain industry representatives report few complaints from or discussions with their membership about the regulation.

- As noted above, one large Midwestern supplier of porcine MBM is selling it for only a slightly higher price per ton than mixed species MBM. As a result, there is currently little price incentive to circumvent the regulation in that region. Thus feedmills are able to substitute pure porcine MBM for mixed species MBM without increasing prices for their customers.

- Persons contacted in the Northeast and in the Far West regions stated that a price incentive for non-compliance exists because mixed species MBM is generally cheaper than other animal-derived protein sources. Porcine MBM is not readily available in these regions. Vegetable protein is widely used but generally requires additional supplements to provide all of the nutrients found in MBM.

  A nutritionist operating in the Far West reported that most feedmills in the region eliminated restricted ruminant protein from all their mixes. Again, there is no indication of any noncompliance in ruminant animal feeding. Some feedmills

incorporated blood meal into cattle rations and the price for this product had increased substantially since the regulation went into effect.

A nutritionist in the Midwest commented that dairy farmers in his area were not using blood meal extensively as a substitute source of protein partly because they fear that it might eventually be found unsafe as a feed supplement. In this area, supplies of pure porcine MBM are ample to supply the demand for animal-derived protein.

- Data on the population of feedmills are quite limited and ERG's contacts could not estimate the number of feedmills separating protein products in their facilities. Based on the assumptions that (a) a minority of feedmills are located in agricultural areas where it is significantly advantageous to carry both restricted and unrestricted protein products, and (2) numerous feedmills have chosen to eliminate restricted proteins from all feed mixes, ERG estimates that 5 to 20 percent of feedmills are separating protein products in their facilities. Even this range, however, is highly speculative. This estimate is exclusive of small feed mixers and feed dealers, which are unlikely to be handling multiple types of MBM.

3.3 Feed Dealers

- In previous market studies of the TSE regulation, a few feedmill industry contacts reported that some small feed mixers and dealers might be out of compliance with the regulation mainly because they were unaware of its requirements. In the contacts made for this study, this concern persisted although information about the regulation is now more widely disseminated. ERG's contacts did not reveal noncompliance or ignorance of the regulation although the coverage of our information on this industry sector is limited.

- Past industry contacts felt that the smallest dealers might be uninformed if they do not belong to the national or state feed associations. Alternatively, they may be affiliated with a major feed manufacturer, such as Ralston-Purina or Agway and these companies have encouraged compliance among their dealers. Because of the volatile nature of the feed market, however, these larger feed companies have limited market power to compel compliance by their dealers. Some feed manufacturers have attempted to exert more control by requiring their dealers to sign agreements stipulating that they will comply with the TSE regulation. Nevertheless, the large feed manufacturers might not be able to compel perfect compliance throughout their network of dealers.

3.4 Transporters

Transporters could contaminate unrestricted feed products with restricted protein if their vehicles are not adequately cleaned. Normal transportation arrangements, however, probably limit the opportunity for such contamination.

Renderers generally ship their mixed species MBM products in specially designed hopper trucks. End-dump trucks or rail shipments are also sometimes used. Feed deliveries are often made using specially designed trucks with pneumatic delivery systems for transferring the feed into the farmers' storage bins.

The renderers' hopper trucks have a V-shaped bottom with a hatch that is opened once the truck is positioned over the storage pit at a feedmill. The MBM might flow immediately out of the truck when the hatch is opened. Often, however, the driver will climb on top of the truck and initiate the flow of material by pushing a stick through the material toward the hatch. The inside surface of the hopper truck is slick and the MBM will generally slide out, leaving little residue. To clean the truck, the driver (or other worker) will sweep out the truck bottom and/or use an air hose to remove residues.

The opportunities for contamination of unrestricted feeds are limited for the following reasons:

- Virtually all commodity producers have an expectation that their shipping company will provide a clean truck or rail car for their products. Specifically, feedmills generally will expect and require a clean truck before they will load feed intended for one of their customers. Drivers are often asked to sign forms verifying that the truck was cleaned prior to loading another commodity.

- A very large share of restricted protein is shipped to feedmills or other large customers in dedicated trucks operated by renderer company employees or contract trucking firms and these drivers are likely to be exposed to information on the regulatory requirements. Similarly, most bulk animal feed deliveries are made in dedicated feed trucks.

- Even many of the independent truck drivers that transport MBM occupy a somewhat specialized niche within the agricultural commodity trucking industry. Relatively few independent owner-operators operate the appropriate hopper trucks to carry restricted protein and are willing to transport this material. As such, the MBM drivers are relatively experienced and knowledgeable about truck cleanout requirements in general, even if they are not familiar with the TSE regulation in particular. One representative of the independent owner-operator truck driver industry estimated that perhaps 80 percent of drivers have some awareness of the regulation or of the basic nature of this or similar cleanout requirements.

The hopper trucks normally used to transport MBM generally are not appropriate for delivering bulk feeds to feedmill customers. The likelihood that a truck used to transport MBM would immediately be loaded with bulk feed for delivery to a ruminant producer appears to be relatively small although some of those contacted believed that it happens with some frequency. Similarly, many feedmill trucks have specialized characteristics that make it unlikely they will be used for hauling protein products.

- Under some arrangements, truck drivers are penalized if the weight of the material delivered is less than that indicated on shipping documents. A relatively small discrepancy in load weight might trigger such a penalty and drivers are thereby encouraged to clean out the truck thoroughly.

Overall, it remains a possibility that transporters of restricted protein products might contaminate other products through negligent cleaning practices or ignorance of the regulation. Nevertheless, the amount of restricted protein shipped in vehicles not directly controlled by renderers or feedmills is limited, and the two types of vehicles generally are not interchangeable in their functions. Further, normal shipping practice would suggest that most residue is removed from transport vehicles and containers before other products are loaded.

3.5 Dairy and Beef Farms

- ERG contacted a selection of dairy farmers and nutritionists to assess compliance with the regulation. In the Illinois area, ERG's contacts indicated that dairy cattle have shifted extensively from ruminant MBM to porcine MBM in their nutrition mixes. One dairy farmer stated that the farmers in his area have never complained about the regulation nor would they feel that noncompliance was worth the risk it represented. Similarly, a dairy cattle producers' discussion group on the Internet has relatively little mention of the TSE regulation. Furthermore, compliance was largely accomplished by the feedmills when they substituted pure porcine MBM for mixed species MBM in dairy cattle feed.

- Beef cattlemen contacted for the study made similar comments. Many feedmills in these areas have replaced mixed species MBM with the vegetable protein sources that are abundant locally. Thus most beef cattle producers have had little choice but to comply.

- Many dairy and beef cattlemen appear to support the regulation. A small percentage of those contacted were critical of the regulation, stating that there were no health risk to begin with and that FDA had simply weakened the commodity markets.

REFERENCES

Wall Street Journal. 1997 and 1998. Daily Cash Prices.